

ABSTRACT OF THE DISCLOSURE

This invention provides an optical transmission system which allows to perform high-quality transmission of each of a plurality of signal channels multiplexed. In the optical transmission system, signal light in which a plurality of signal channels with an optical frequency spacing of 400 GHz or more but 12.5 THz or less is transmitted from an optical transmitter to a Raman amplifier through an optical fiber transmission line. In the Raman amplifier, pumping light from a pumping light source unit is supplied to an optical fiber through an optical coupler. The multiplexed signal light inputted to the Raman amplifier arrives at the optical fiber through an optical isolator and optical coupler, and Raman-amplified by the optical fiber. The Raman-amplified multiplexed signal light is outputted from the Raman amplifier through an optical coupler and optical isolator.